

Vitronectin XF™

Defined, xeno-free matrix that supports the growth and differentiation of human pluripotent stem cells under serum-free, feeder-free conditions

| | |
|----------------|-------|
| Catalog #07180 | 2 mL |
| #07190 | 1 Kit |
| #07191 | 1 Kit |



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Product Description

Vitronectin XF™, developed and manufactured by Nucleus Biologics, is an effective alternative to Corning® Matrigel®. Vitronectin XF™ is a defined, xeno-free matrix that supports the growth and differentiation of human pluripotent stem cells. When used with mTeSR™1 (Catalog #85850), mTeSR™ Plus (Catalog #05825), TeSR™2 (Catalog #05860), or TeSR™-E8™ (Catalog #05990), Vitronectin XF™ provides a completely defined culture system for the maintenance of human embryonic stem (ES) cells and human induced pluripotent stem (iPS) cells under feeder-free conditions.¹⁻⁵ This system allows complete control over the culture environment, resulting in more consistent cell populations and reproducible results in downstream applications.

Vitronectin XF™ is available individually (Catalog #07180) or in a kit with either Gentle Cell Dissociation Reagent (GCDR) or ReLeSR™ (Catalog #07190 or 07191, respectively). These kits also include CellAdhere™ Dilution Buffer and Non Tissue Culture-Treated 6-Well Plates.

Ordering Information

| PRODUCT NAME | CATALOG # | SIZE | KIT COMPONENTS |
|----------------------------------|-----------|-------|---|
| Vitronectin XF™ | 07180 | 2 mL | Not applicable. |
| Vitronectin XF™ Kit with GCDR | 07190 | 1 Kit | <ul style="list-style-type: none">• Vitronectin XF™• Gentle Cell Dissociation Reagent• CellAdhere™ Dilution Buffer• Non Tissue Culture-Treated 6-Well Plates |
| Vitronectin XF™ Kit with ReLeSR™ | 07191 | 1 Kit | <ul style="list-style-type: none">• Vitronectin XF™• ReLeSR™• CellAdhere™ Dilution Buffer• Non Tissue Culture-Treated 6-Well Plates |

Component Storage and Stability

| PRODUCT NAME | CATALOG # | SIZE | STORAGE | SHELF LIFE |
|--|-----------|--------|--------------------------|--|
| Vitronectin XF™ | 07180 | 2 mL | Store at -20°C or -80°C. | Stable until expiry date (EXP) on label. |
| Non Tissue Culture-Treated 6-Well Plates | 27147 | 8/Pack | Store at 15 - 25°C. | See supplier label. |

For storage and stability of other components, refer to the applicable Product Information Sheets.

Directions for Use

COATING CULTUREWARE WITH VITRONECTIN XF™

Use sterile techniques when coating cultureware with Vitronectin XF™.

1. Thaw Vitronectin XF™ at room temperature (15 - 25°C).

NOTE: If not used immediately, store at 2 - 8°C for up to 2 weeks. Alternatively, aliquot and store at -20°C or -80°C. Do not exceed the expiry date (EXP) as indicated on the label. Avoid additional freeze-thaw cycles.

2. Dilute Vitronectin XF™ in CellAdhere™ Dilution Buffer to reach a final concentration of 10 µg/mL (i.e. use 40 µL of Vitronectin XF™ per 1 mL of CellAdhere™ Dilution Buffer). Use a 50 mL polypropylene conical tube (e.g. Catalog #38010) to dilute Vitronectin XF™.
3. Gently mix the diluted Vitronectin XF™. Do not vortex.

- Immediately use the diluted Vitronectin XF™ solution to coat non-tissue culture-treated cultureware. See Table 1 for recommended coating volumes.

Table 1. Recommended Volumes for Coating Cultureware with Vitronectin XF™

| CULTUREWARE | VOLUME OF DILUTED VITRONECTIN XF™ |
|----------------------------|-----------------------------------|
| 6-well plate | 1 mL/well |
| 100 mm dish | 6 mL/dish |
| T-25 cm ² flask | 3 mL/flask |
| T-75 cm ² flask | 8 mL/flask |

- Gently rock the cultureware back and forth to spread the Vitronectin XF™ solution evenly across the surface.
NOTE: Non-tissue culture-treated cultureware should be used for coating with Vitronectin XF™. If the cultureware's surface is not fully coated by the Vitronectin XF™ solution, it should not be used for human ES and iPS cell culture.
- Incubate at room temperature (15 - 25°C) for at least 1 hour before use. Do not let the Vitronectin XF™ solution evaporate.
NOTE: If not used immediately, the cultureware must be sealed to prevent evaporation of the Vitronectin XF™ solution (e.g. with Parafilm®) and can be stored at 2 - 8°C for up to 1 week after coating. Allow stored coated cultureware to come to room temperature (15 - 25°C) for 30 minutes before proceeding to the next step.
- Gently tilt the cultureware on to one side and allow the excess Vitronectin XF™ solution to collect at the edge. Remove the excess solution using a serological pipette or by aspiration. Ensure that the coated surface is not scratched.
- Wash the cultureware once using CellAdhere™ Dilution Buffer (e.g. 1 mL/well if using a 6-well plate).
- Aspirate wash solution and add the appropriate volume of culture medium (e.g. 2 mL/well if using a 6-well plate).

To passage ES and iPS cells cultured on Vitronectin XF™ in TeSR™ media using GCDR or ReLeSR™, refer to the Technical Manuals for mTeSR™1, mTeSR™ Plus, TeSR™2, or TeSR™-E8™. These documents are available at www.stemcell.com or contact us to request a copy.

References

- Braam SR et al. (2008) Recombinant vitronectin is a functionally defined substrate that supports human embryonic stem cell self-renewal via alphavbeta5 integrin. *Stem Cells* 26(9): 2257–65.
- Chen G et al. (2011) Chemically defined conditions for human iPSC derivation and culture. *Nat Methods* 8(5): 424–9.
- Li J et al. (2010) Impact of vitronectin concentration and surface properties on the stable propagation of human embryonic stem cells. *Biointerphases* 5(3): FA132–42.
- Prowse ABJ et al. (2010) Long term culture of human embryonic stem cells on recombinant vitronectin in ascorbate free media. *Biomaterials* 31(32): 8281–8.
- Rowland TJ et al. (2010) Roles of integrins in human induced pluripotent stem cell growth on Matrigel and vitronectin. *Stem Cells Dev* 19(8): 1231–40.



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